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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAVINDRA K. SHETTY and VENKATESAN THYAGARAJAN

Appeal 2009-000519
Application 09/893,091
Technology Center 3600

Decided: February 25, 2010

Before, MURRIEL E. CRAWFORD, HUBERT C. LORIN and JOSEPH A.
FISCHEITTI, *Administrative Patent Judges*.

FISCHEITTI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1-60. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

This appeal arises from the Examiner's Non-Final Rejection, mailed 11/30/2006. The Appellants filed an Appeal Brief in support of the appeal on

2/11/2008. An Examiner's Answer to the Appeal Brief was mailed on 4/30/2008.
A Reply Brief was filed on 5/19/2008.

SUMMARY OF DECISION

We AFFIRM and add new grounds of rejection under 35 U.S.C. § 35 U.S.C. § 101, and under 35 U.S.C. § 112, second paragraph.

THE INVENTION

Appellants claim a system and method for management of inventory and production, and more particularly to management of an individual customer order to maximize profit. (Specification 1:9-10).

Claims, 1, 46 and 47 reproduced below, are representative of the subject matter on appeal.

1. A computerized method for production management comprising: determining a reduced quantity of a requested product quantity in a customer order in reference to the inverse of the probability of profit of the product; and communicating the reduced quantity to a production management process.

46. A system for transacting in electronic commerce comprising: a processor; and software means operative on the processor for degrading the quantity of an order of a plurality of products using an inverse probability of profit function in reference to profits from each of the products in the order.

47. A computerized apparatus for production management comprising: a demand analyzer, that determines if a vendor can satisfy a quantity of customer demand for a product, from a database of process and inventory operation data and from a database of customer order data; and a graceful quantity degrader, operably

coupled to the demand analyzer, that yields a degraded quantity from the quantity of customer demand using an inverse probability of profit function.

THE REJECTION

The Examiner relies upon the following as evidence of unpatentability:

Eder	5,615,109	Mar. 25, 1997
Kennedy	6,055,519	Apr. 25, 2000

The following rejections are before us for review.¹

Claims 1-3, 19-21, 39-40, 46-49, and 54-56 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kennedy.

Claims 4-18, 22-38, 41-45, 50-53, and 57-60 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kennedy and further in view of Eder.

ISSUE

Have Appellants shown that the Examiner erred in rejecting the claims on appeal as being unpatentable under 35 U.S.C. § 103(a) over Kennedy on the grounds that a person with ordinary skill in the art would understand that because the negotiation engine in Kennedy performs a ranking process for placed orders, it would also be capable of ranking products based on “inverse profitability?”

PRINCIPLES OF LAW

¹ The Examiner withdrew the rejection under 35 U.S.C. § 112 first paragraph. (Answer 35).

Obviousness

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 550 U.S. at 407 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

“[I]f the preamble merely state[s] a purpose or intended use and the remainder of the claim completely defines the invention independent of the preamble,” it does not constitute a limitation. *Lipscomb’s Walker on Patents*, 3rd Edition, Vol. 3, § 11.11 at p. 361 (citing *Marston v. J.C. Penney Co.*, 353 F.2d 976, 986 (4th Cir. 1965)); *see also, Rowe v. Dror*, 112 F.3d 473, 478, (Fed. Cir. 1997).

Novelty/Obviousness Nonfunctional Descriptive Material

When “non-functional descriptive material” is recorded or stored in a memory or other medium (i.e., substrate) it is treated as analogous to printed matter cases where what is printed on a substrate bears no functional relationship to the substrate and is given no patentable weight. *See In re Gulack*, 703 F.2d

1381, 1385 (Fed. Cir. 1983).

Nonfunctional descriptive material cannot render nonobvious in an invention that would have otherwise been obvious. *In re Ngai*, 367 F.3d 1336, 1339 (Fed. Cir. 2004). *Cf. In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983) (when descriptive material is not functionally related to the substrate, the descriptive material will not distinguish the invention from the prior art in terms of patentability).

Patentable weight need not be given to descriptive material absent of a new and unobvious functional relationship between the descriptive material and the substrate. *See In re Lowry*, 32 F.3d 1579, 1582-83 (Fed. Cir. 1994); *In re Ngai*, 367 F.3d 1336, 1338 (Fed. Cir. 2004). *See also Ex parte Mathias*, 84 USPQ2d 1276 (BPAI 2005) (non-precedential) (Federal Circuit Appeal No. 2006-1103; affirmed without written opinion Aug. 17, 2006).

FINDINGS OF FACT

We find the following facts by a preponderance of the evidence:

1. The (Specification 13: 16-20) defines inverse of profitability as: “[t]he inverse profit probability of a product is the ratio of the profit for one of the products to the profit of all the products in the order, yielding the portion of total profit attributable to the one product, subtracted from 1, as shown in Table 4:

$$\text{inverse_profit_probability} = \left[1 - \left(\frac{\text{profit_of_one_product_in_the_customer_order}}{\text{profit_of_the_all_of_products_in_the_order}} \right) \right]$$

Table 4 is set forth above.

2. The Specification defines “profit probability” as: determined from a profit of one of the plurality of products in the customer order, and from the profit of all of the plurality of products in the customer order. (Specification 13:14-16)

3. The Examiner found that

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller [Column 6, lines 26-28]; thus, Kennedy et al., implicitly teaches the step of identifying of the most profitable products of a group of products that would enable the maximization of profits {in order to identify the most profitable product, the profitability of all products must be known}. (Answer 5)

4. The Examiner additionally found that:

... it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. (Answer 5-6, 16)

5. The (Specification 13:9-11) describes the inverse profit probability as a core element in the process of a vendor maximizing profit of the requests of a plurality of profits stating: “[t]hereafter, a process of graceful degradation in reference to optimal vendor profit is performed. Method 600 includes determining 640 or calculating, an inverse profit probability.”

6. Kennedy ranks customer orders by customer-specified rank, weighting, importance of this Delivery Request relative to all other Delivery Requests from

this customer. (col. 12, ll. 5-7)

7. Kennedy discloses a negotiation engine which can be used to communicate promises from the seller 12 to the buyer 14. (col. 4, ll. 10-11)

ANALYSIS

As we explain below, we find claims 1-45, and 54-60 are directed to nonstatutory subject matter, and we cannot determine the scope of claim 46. That finding is dispositive of the patentability of these claims. Accordingly, we do not reach the prior art rejection of claims 1-46, and 54-60. *Cf. Ex parte Gutta*, 93 USPQ2d 1025, 1036 (Bd. Pat. App. & Int. 2009) (precedential):

As to these prior art rejections, our decision is dispositive with respect to patentability since (1) claims 1, 3-9, 11-14, 16-19, and 21-23 on appeal do not recite patent-eligible subject matter under § 101, and (2) we cannot determine the scope of claim 20. We therefore need not reach the question of whether claims 1, 3-7, 9, 11, 12, 14, 16, 17, and 19-23 would have been anticipated under § 102 and claims 8, 13, and 18 would have been obvious under § 103. *See Diehr*, 450 U.S. at 188; *Comiskey*, 554 F.3d at 973 (declining to reach obviousness rejection on appeal after concluding many claims were nonstatutory under § 101); *Bilski*, 545 F.3d at 951 n.1 (noting that § 101 is a threshold requirement and that Examiner may reject claims solely on that basis); *In re Rice*, 132 F.2d 140, 141 (CCPA 1942) (finding it unnecessary to reach rejection based on prior art after concluding claims were directed to nonstatutory subject matter). *See also In re Steele*, 305 F.2d 859, 862 (CCPA 1962) (supporting not presenting an art rejection when considerable speculation into the scope of the claim is required).

The 35 U.S.C. § 103(a) Rejections

Each of the apparatus claims 47-53 before us on appeal contain the limitation of using an inverse of the probability of profit of a product.

Appellants' arguments against each of the 35 U.S.C. § 103(a) rejections are based on a perceived deficiency of Kennedy to disclose inverse profit probability and the Examiner's resulting reliance on inherency and Official Notice to remedy the deficiency. Inasmuch as Appellants raise the same issues with respect to each of the claims, we discuss them together, addressing each of Appellants' arguments in turn.

Preliminarily, we note that the Specification explicitly defines the term "inverse profitability" (FF 1). The definition given is "the ratio of the profit for one of the products to the profit of all the products in the order, yielding the portion of total profit attributable to the one product, subtracted from 1." This definition is also set forth in mathematical form in the Specification (FF 1). Given that the limitation "inverse profitability" has a definitional basis in the Specification, we are constrained to review the prior art for that definition as an element of the claims.

Appellants argue that Kennedy does not disclose using inverse profitability in determining a reduced quantity of a requested product quantity in a customer order and that "this shortcoming cannot be overcome simply by putting forth a general proposition that Kennedy inherently teaches the step of identifying the most profitable products." (Appeal Br. 17)

In reply, the Examiner maintains that while Kennedy does not disclose

inverse profitability, Kennedy: “implicitly teaches the step of identifying of the most profitable products of a group of products that would enable the maximization of profits” (FF 3) and/or, 2. “it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item) (FF 4).”

Regarding the taking of Official Notice for the claim limitation “inverse profitability,” we find that this is a core element in determining the reduced quantity of a requested product quantity in a customer order. This is because the Specification clearly focuses the method 600 on determining 640 or calculating, an inverse profit probability (FF 5). Therefore, the Examiner’s reliance on Official Notice to meet this limitation cannot establish the Examiner’s prima facie case. (With respect to core factual findings in a determination of patentability, the Examiner must point to some concrete evidence in the record in support of these findings.) *In re Zurko*, 258 F.3d 1379, 1385 (Fed. Cir. 2001).

However, the Examiner also asserts that Kennedy implicitly discloses “inverse profitability” based on the Examiner’s interpretation of Kennedy at column 6, lines 26-28 (FF 3). But, Kennedy at column 6, lines 26-28, merely discloses: “[i]n general, the present invention can be used in sales environments for the purpose of optimizing the profits of both the buyer and seller” and does not discuss relative profitability between products. In fact, in Kennedy customer orders are ranked not by relative profitability, but by customer-specified rank, weighting, importance of this Delivery Request relative to all other Delivery

Requests from this customer (FF 6). Therefore, we do not find that Kennedy discloses by implication or inherency the “inverse profitability” feature.

We nevertheless find that claims 47-53 are drawn to an apparatus and which claims recite devices, such as “a graceful degrader”, which in turn recites the “inverse profitability” feature but in functional terms. We find that the negotiation engine in Kennedy communicates promises from the seller 12 to the buyer 14 including a ranking of promised orders to the customer. (FF 7) We thus find that since the negotiation engine in Kennedy performs a ranking process, it would also be capable of ranking products based on relative profitability, e.g., “inverse profitability”, as required by the claims. Functional language is given weight to the extent that the prior art is capable of functioning in the manner claimed. *See In re Schreiber*, 128 F.3d 1473, at 1478-1479 (Fed. Cir. 1995).

We thus affirm the rejection of claims 47-53, but designate it as a new ground under 37 C.F.R. § 41.50(b) because our rationale is different from that used by the Examiner.

NEW GROUND

Pursuant to 37 C.F.R. § 41.50(b), we enter a new ground of rejection.

We reject claims 1-45, 54-60 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.

Claims 1-18 are drawn to a computerized method, but each claim fails to subsequently use the term “computerized” in the body of the claim, and therefore fails to breathe life and breath into it by setting forth the complete combination. *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9

USPQ2d 1962, 1966 (Fed. Cir. 1989). We therefore find that claims 1-18 recite a method without being tied to a particular machine or apparatus.

We further find that these claims recite nothing which can be construed as transforming an article or a signal representing the article into a different state or thing. Therefore, we find claims 1-18 fail to recite patent eligible subject matter. The test to determine whether a claimed process recites patentable subject matter under § 101 is whether: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. *In re Bilski*, 545 F.3d 943, 961-62 (Fed. Cir. 2008) (en banc).

Claims 19-36, 39-45, 54-60 are drawn to a “computer-readable medium” and claims 37 and 38 are drawn to “a computer data signal embodied in a carrier wave.” These claims are directed to nonstatutory subject matter for these reasons.

First, the claims broadly cover transient, propagating signals. The computer-readable medium claims recite computer program instructions “embodied on a computer-readable medium.” According to the Specification, the computer readable medium covers “the processor of the clients executing the instructions from computer readable media” (Specification 9:12-13). Executing instructions from the computer readable media implicates carrier waves and signals.²

² Cf. *Ex parte Uceda-Sosa*, 90 USPQ2d 1625, 1633 (Bd. Pat. App. & Int. 2008) (non-precedential);

We find that Appellant’s description of a ‘computer readable media’ or ‘signal bearing media’ implicates carrier waves and signals. Therefore, the cited claims merely entail the use of carrier waves to embody a machine executable program or data structure. Because carrier waves and signals are transitory, the embodiment of data

Transient, propagating signals are not patentable subject matter. *See In re Nuijten*, 500 F.3d 1346, 1356 (Fed. Cir. 2007). Because the scope of the claims is such that they include subject matter not patent-eligible under §101, the claims must be rejected under § 101 as covering nonstatutory subject matter. *See also* “Subject Matter Eligibility of Computer Readable Media,” Notice of the Director, Jan. 26, 2010; http://www.uspto.gov/patents/law/notices/101_crm_20100127.pdf.

Setting aside that the claimed “medium” covers patent-ineligible transient signals (*see supra*), even assuming for the sake of argument, the claims directed to “computer-readable medium having computer-executable instructions to cause a computer to perform a method for production management” covered only patentable manufactures, such a recitation would still only amount to a field-of-use limitation to the scope of the claim.³

In that regard, for the reasons already discussed, the subject matter of claims 19-45, 54-60 are not tied to a particular machine or apparatus, nor do they

structure or machine executable program as a carrier wave is also transitory, and is similarly not statutory.

³ *Cf. Ex parte Cornea-Hasegan*, 89 USPQ2d 1557, 1562-1563 (Bd. Pat. App. & Int. 2009) (non-precedential):

Limiting the claim to computer readable media does not add any practical limitation to the scope of the claim. Such a field-of-use limitation is insufficient to render an otherwise ineligible claim patent eligible. *See id.* (citing *Diehr*, 450 U.S. at 191-92 (noting that eligibility under § 101 “cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.”)) To permit such a practice would exalt form over substance and permit Appellant to circumvent the limitations contemplated by § 101.

transform any article into a different state or thing. Accordingly, they are directed to nonstatutory subject matter.

For these reasons, we reject claims 1-45, 54-60 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.

We reject claim 46 under 35 U.S.C. § 112, second paragraph because claim 46 fails to particularly point out and distinctly claim the subject matter which the applicant regards as his invention.

Claim 46 recites a claim element in accordance with 35 U.S.C. § 112, paragraph 6. It states in pertinent part, “software means operative on the processor for degrading the quantity of an order of a plurality of products using an inverse probability of profit function in reference to profits from each of the products in the order.” We have reviewed the (Specification 19:22-32) but have not been able to discern the algorithm corresponding to the claim function, “for degrading the quantity of an order of a plurality of products using an inverse probability of profit function in reference to profits from each of the products in the order.”

When a Specification discloses *no* algorithm corresponding to a computer-enabled means-plus-function limitation in a claim, an applicant has necessarily failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112. *See also Aristocrat*, 521 F.3d 1328, 1333 (*quoting Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1253 (Fed. Cir. 2005) (“‘[t]he corresponding structure for a § 112 ¶ 6 claim for a computer-implemented function is the algorithm disclosed in the specification.’ *Harris* 417 F.3d at 1249.”); *Net MoneyIN, Inc. v. Verisign, Inc.* 545 F.3d 1359, 1367 (Fed. Cir. 2008)

(“‘[A] means-plus-function claim element for which the only disclosed structure is a general purpose computer is invalid if the specification fails to disclose an algorithm for performing the claimed function.’”) *See also Blackboard, Inc. v. Desire2Learn Inc.*, 574 F.3d 1371 (Fed. Cir. 2009) (finding Blackboard’s means-plus-function claims indefinite because the patent describes an undefined component, *i.e.*, a black box, that performs the recited function but does not disclose how the component performs the function). *See further Ex parte Catlin*, 90 USPQ2d 1603, 1605 (BPAI 2009) (precedential) (during prosecution, computer-enabled means-plus-function claims will be held unpatentable under 35 U.S.C. § 112, second paragraph, as being indefinite if a Specification fails to disclose any algorithm corresponding to the recited function in the claims). The Specification fails to disclose an algorithm corresponding to the recited function at issue in claim 46 such that one of ordinary skill in the art could determine the scope of claim 46. Accordingly, we reject claim 46 under 35 U.S.C. § 112, second paragraph, as being indefinite.

CONCLUSIONS OF LAW

We conclude the Appellants have not shown that the Examiner erred in rejecting claims 47-53. The decision of the Examiner to reject claims 47-53 is **AFFIRMED** and we enter a new ground of rejection of claims 1-45, 54-60 under 35 U.S.C. § 101; and of claim 46 under 35 U.S.C. § 112, second paragraph.

This decision contains new grounds of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the Appellants, **WITHIN TWO MONTHS FROM THE DATE OF THE DECISION**, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

- (1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner

- (2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same record

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED; 37 C.F.R. § 41.50(b)

JRG

Appeal 2009-000519
Application 09/893,091

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